ARIZONA GAME AND FISH DEPARTMENT
HABITAT PARTNERSHIP PROGRAM
HABITAT ENHANCEMENT AND WILDLIFE MANAGEMENT PROPOSAL

PROJECT INFORMATION

Project Title: Sunset Restoration Project	**Project No. 10-101**
Region/GMU: 27 South	**HPC: Safford HPC**

Project Type: Mechanical thinning and Prescribed Fire.

Project Description:

There is a need to restore fire to the Sunset Ecosystem to reduce tree densities and create varying successional stages of browse species, which combined will stimulate herbaceous species growth leading to increased ground cover, more stable watershed conditions, and improved habitat and rangeland conditions. The Arizona Game and Fish Department and the Clifton Ranger District have identified the Sunset Restoration Project area as a priority for treatment to provide much needed habitat improvement (cover and forage) for mule deer, Coues whitetail deer, Merriam's turkey and Mearn's quail, javelina, black bear, and non-game species.

The Sunset Restoration Project consists of 60,062 acres delineated within three blocks (A, B, and C) with one block being treated at a time with each burn block treated consecutively based on vegetative recovery criteria and funding (Project Map). Landscape prescribed fire will occur among all blocks with a combination of thinning targeted areas on approximately 1, 238 acres of Madrean evergreen woodland by both chainsaws and a Bobcat Skid Steer with tree shear attachment in Block C. Project objectives require a mosaic burn targeting specific habitat and soils where the Clifton Ranger District has been successful on prior restoration projects; therefore, anticipated prescribed fire acres that will be implemented is: 7,067 acres of 19,562 (or 36%) in Block A; 8,243 of 16, 234 (or 51 %) in Block B; and 14,180 acres of 24,265 (or 58%) in Block C.

The project will be implemented in three phases with the initial phase consisting of mechanical thinning in Block C in the Fall of 2008 and implementing prescribed fire in Block A during the Spring of 2009. Once project specific objectives are met with prescribed fire within Block A, watershed recovery must occur prior to implementing the second prescribed burning phase. This watershed recovery criteria was established to minimize watershed effects to Threatened and Endangered Species (TES). Additionally, riparian and TES buffer's have been incorporated into the project design to further reduce potential erosion and water quality following prescribed fire within TES and Critical Habitats within the project area including: San Francisco River, Coal Creek, Dix Creek, and Rattlesnake Pasture Tank.

NEPA is complete.

Wildlife Species to Benefit: Mule deer (50%), Whitetail Deer (40%), Rocky Mountain Bighorn sheep (10%)

Possible Funding Partners: USFS, WCF AZG&F-Pinetop, Safford HPC, ADA, MDF

Implementation Schedule: **Beginning: March 2011 Completed: June, 2011**	**NEPA Compliance: (if applicable)** **Completed: Yes _X___ No ___** **Projected Completion Date: NEPA complete**

PROJECT FUNDING

SBG Funds Requested: $60,000

Cost Share Funds: $50,000 WCF funds AZGFD, $85,000 USFS fuels funding,

Total Project Costs: $195,000

PARTICIPANT INFORMATION

Applicant:Rob Lever, FMO,Clifton Ranger District (please print) **Telephone: 928-687-8604**	**Address: Clifton Ranger District** **397240, AZ 75** **Duncan AZ 85534**
AGFD Contact and Phone No. Steve Najar, 928-687-2454 **(If applicant is not AGFD personnel)**	
Coordinated with: Safford HPC, AZGFD	**Date: 3/31/10**
Applicant's signature:/s/ Rob Lever	**Date:3/29/10**

SEND COMPLETED APPLICATIONS TO:
Game Branch
2221 W. Greenway Rd.
Phoenix, AZ 85023
rthompson@azgfd.gov

WAS PROJECT PRESENTED TO THE LOCAL HPC? YES __x____ NO _____

HAS PROJECT BEEN SUBMITTED IN PREVIOUS YEARS? IF SO WAS IT FUNDED?
Yes, project submitted in 2009, funded $75,000

NEED STATEMENT/PROBLEM ANALYSIS: There is a need to restore fire to this ecosystem to reduce tree densities and create varying successional stages of browse species, which combined will stimulate herbaceous species growth leading to increased ground cover, more stable watershed conditions, and improved habitat and rangeland conditions. The Arizona Game and Fish Department and the Clifton Ranger District have identified the Sunset Restoration Project area as a priority for treatment to provide much needed habitat improvement (cover and forage) for mule deer, Coues whitetail deer, Merriam's turkey and Mearn's quail, javelina, black bear, and non-game species.

Existing conditions within the project area indicates widespread encroachment of woody species (primarily alligator and one-seed juniper) into semi-arid desert grasslands and increased occurrence within the Madrean evergreen woodland across the project area. Both of these processes have increased canopy closure reducing the amount of herbaceous ground vegetation. Previously, lack of fine herbaceous fuels due to historic grazing use and man's intervention to put out all fires has disrupted the natural fire return interval severely restricting the influence of fire as an ecosystem disturbance to maintain the diversity and productivity of the semi-arid desert grassland and

Madrean evergreen woodland vegetative communities found within the project area.

Ecological conditions have diverged from what historically existed throughout the project area within represented vegetation communities. The combination of legacy tree density and associated fire scarring observations, old aerial and range analysis photographs, and results of adjacent restoration work in similar soil types indicate that tree canopy density ranged from 5-10%, herbaceous production varied from 1200-2500 pounds dry weight of all herbaceous species, a mosaic of seral stages occurred within browse slopes, fire return intervals ranged from 5-10 years, and fire severities were low to moderate over most of burned acreages. Today's conditions show areas with much higher tree canopy densities, much longer fire return intervals, and lower herbaceous species production.

Prescribed treatments intended to reduce tree canopies, lower tree densities, and provide a mosaic of browse successional stages are expected to stimulate subsequent growth of herbaceous species, increase ground cover which will stabilize the watershed, increase habitat heterogeneity, improve wildlife habitat, and provide opportunities for fire to be returned on more natural intervals to maintain vegetative conditions that are sustainable over time.

PROJECT OBJECTIVES: Overall objectives for the project are to:

1. Create and maintain a mosaic of vegetation seral stages which resemble vegetation conditions shaped by naturally occurring free spreading fire.
2. Enhance mule deer, white-tailed deer, turkey, javelina, and big horn sheep habitat by re-establishing seral stages in woodland and shrub communities that depict natural variability from the effects of free-spreading fire, providing for forage, shelter, and breeding habitat.
3. Establish prescription parameters to ensure that any potential effects are not likely to affect TES species or their designated critical habitat.
4. No more than 10 percent of any riparian or TES buffer will receive low to moderate intensity fire.
5. Allow for fire (wildland fire use1) to resume its natural role as a disturbance in this fire adapted ecosystem.
6. Ensure adequate and effective ecological recovery of areas treated with prescribed fire and wildland fire managed for resource benefits.
7. Protect natural and cultural values at risk of destruction from wildfire.

PROJECT STRATEGIES: The Strategy for the Sunset Restoration Project is to complete all thinning with existing district personnel and the district skid steer by March 2010 by using regular program funds, HCP funds, and AZG&F WCF funds. Burning is likely to take place in the spring of 2011 with the use of HCP funds and federal funds.

PROJECT LOCATION:
The Sunset Restoration Project is approximately 60,062 acres in size, ranges in elevation from 3,600 to 7,047 feet, and is located in the very southern part of the Clifton Ranger District (Map 1). The project area is divided into three blocks (A, B, and C) that range in size from 16,234 to 24,265 acres. Legal description of areas partially or totally within the project boundary are: T03S, R30E, sections, 11-15, 21-28, and 33-36; T03, R31E, sections, 3-11 and 14-36; T03, R32E, sections, 30-32; T04, R30E, sections, 1-4, 9-16, and 21-24; T04S, R31E, sections, 1-25 and 36; and T04, R32E, sections, 5-8, 17-19, and 30 (See Map 1).

LAND OWNERSHIP AT PROJECT SITE (Please state specifically if PRIVATE PROPERTY and

provide landowner's name): Project treatment area lies entirely within the Clifton Ranger District, USFS, Apache Sitgreaves N.F.

IF PRIVATE PROPERTY, IS THERE A STEWARDSHIP AGREEMENT BETWEEN THE LANDOWNER AND THE DEPARTMENT? N/A

HABITAT DESCRIPTION: There are four vegetation associations within the project area by acres for each vegetation association (see table). Past management has contributed to a change in forest structure and species composition in the proposed project area from juniper savannas with a historically open, scattered structure, to a dense, more closed canopy woodland reducing grasslands. Dense woodlands such as found on the mesa tops (former savannas) within the project area are more susceptible to larger scale stand replacement fires not characteristic of the historic fire regime of this area.

Acres of Vegetation Associations by Vegetative Class, Treatment Block for Sunset Restoration Project.				
Vegetative Class	Block A	Block B	Block C	Total Acres
Madrean Evergreen Inclusions of Pinyon and Shrub Dominated	14,063	10,010	12,784	36,856
Madrean Pine Oak Woodland	680	2,473	7,051	10,204
Semi-Arid Desert Grassland	4,380	3,752	4,294	12,426
Mixed Broadleaf Deciduous Riparian	440	0	137	576
Total	19,563	16,234	24,265	60,062

Out of the four vegetative classes, Madrean Pine Oak and Semi-Arid Desert Grassland are the most problematic and consist of ecological conditions that have diverged from what historically existed where prescribed fire has been found effective in restoring ecological conditions.

ITEMIZED USE OF FUNDS: Funds required for Phase III of Sunset Restoration project.
USFS funds $85,000
WCF funds, $50,000
2010 HPC funds $60,000

Total = $195,000

LIST COOPERATORS AND DESCRIBE POTENTIAL PARTICIPATION:
Current cooperators are the Clifton Ranger District and the Arizona Game and Fish Department.

Potential partners include Arizona Deer Association, Mule Deer Foundation, SCI, Quail Unlimited, NWTF, and the livestock permitees.

PROJECT MONITORING PLAN: The proposed monitoring plan consists of several range monitoring related plots within the project areas that have been combined with canopy density transects. The plots have been read to complete the NEPA for each project and will need to be re visited due to post burn re stocking guidelines outlined in the NEPA documents. In addition, photo points have been established which will illustrate the effectiveness of treatments. Similar data and photo points were used with prior restoration projects on the Clifton Ranger District and have proved effective at monitoring project effectiveness.

PROJECT MAINTENANCE: The project area will be available for re-entry if monitoring shows lack of effectiveness. However, once objectives are achieved for each project, Wild land fire use may be employed as a maintenance tool to enhance and maintain the initial project investment.

PROJECT COMPLETION REPORT TO BE FILED BY: A written project completion report will be filed by the Clifton Ranger District at the completion of each phase of the project. Additionally, the Clifton Ranger District will provide a CD with photos to awarding grant sources. A power point presentation will be prepared at a later date (beyond 30 days of completion) and made available to partners to view the scope of project implementation and post-treatment photos.

WATER DEVELOPMENT PROJECTS (see attached worksheet): N/A

TREE SHEARING (AGRA-AXE, PUSH) PROJECTS (see attached worksheet):

See attached Worksheet.

ARIZONA GAME AND FISH DEPARTMENT
TREE SHEARING WORKSHEET

PROJECT NAME: Sunset Restoration Project

1) What is the estimated acreage of the project? 1,238 acres of mechanical thinning in Block C (75% already complete).

2) How are the trees going to be cleared? (agra axe, chain saw, push): Agra axe and chainsaw to be completed by USFS employees.

3) What is the estimated number of trees per acre?

Average canopy coverage at monitoring sites per Monitoring Plot		
Location	Soil Type	Canopy Cover
Hamilton Mesa Center	632	17%
Six Shooter	632	17%
Hamilton Mesa North	632	6%
Sunset Glade South	587	23%
Hamilton Mesa West	630	62%
Big Lue	630	20%
Maverick Tank	630	36%
Burnt Stump South	575	30%
Sunset Glade North	480	9%
Dix Mesa	479	7%
Mesquite	469	56%
Hamilton Mesa	573	8%
Burnt Stump	573	9%
The Junipers	589	39%

4) Describe trees to be cleared (species, estimated diameter, single stem, multi-stem):

Species consist primarily of multi-stem alligator juniper and one-seed juniper in a size class up to 9" dbh. However, as the treatment area is considered a savannah, not all trees will be cut and single stem trees will be selected for retention. Oak species will be treated with fire only.

5) Describe terrain (slope, soil type, rocks, etc.)

Thinning will take place primarily on slopes less than 5% and on relatively smooth terrain. Primary soil types to be thinned will be 630 and 632 soils which are characterized as Lithic Aruistolls. These soils mirror soils that were treated on previous restoration projects on the Clifton Ranger District and have proven to respond very well to thinning and fire treatments.

6) Please list any special land management status for the project site (i.e. Wilderness, National Park, National Monument, etc). If private land, list landowner. No special land status.

N/A

7) Please provide the following information about access to the proposed site:

Type of access (mark one): _X__2x4 vehicles X__4x4 only ___foot only**

**If foot access only: Distance in miles: Approx. hiking time:

Does access to this site require crossing private or tribal lands? ___YES _x__NO

Is the site relatively accessible for tree shearing equipment? ___x__YES ___NO

Please describe any restrictions to public access: None.